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CROP WATCH

University of Nebraska Cooperative Extension
Institute of Agriculture and Natural Resources

No. 97-8
May 9, 1997

Plan to avoid costly accidents

Herbicide-resistant soybeans gain in popularity

Soybean varieties, such as those resistant to Roundup Ultra and sulfonylurea herbicides, are becoming increasingly popular. While these new varieties offer advantages for producers, they also require special attention to use and management to avoid costly accidents and to limit the potential for developing herbicide-resistant weeds.

When planting any herbicide-resistant cultivar (HRC), remember to keep good records to guard against erroneous herbicide application to a non-resistant variety.

STS soybeans

Sulfonylurea tolerant soybeans (STS) have improved tolerance to Reliance and Synchrony herbicides which reduces yellowing and stunting sometimes caused by these herbicides. STS varieties were

See related stories on postemergence herbicides, spray drift and the potential for weed resistance on pages 63-64.

introduced in 1993 and are available from many seed companies. At least one company offers both STS and Roundup Ready resistance in the same variety.

Roundup Ready soybeans

Roundup (glyphosate) is a common non-selective herbicide with many excellent properties. It has very low mammalian toxicity, low soil persistence, and it effectively controls a wide spectrum of weeds. Because of these excellent properties, it was one of the first herbicides selected to be used in the development of resistant crops.

Roundup Ready (RR) soybeans were introduced in 1996 with excellent results. As many as 8 million acres of Roundup Ready soybeans may be planted in 1997.

Many growers reported that only one Roundup Ultra application was needed in 1996 to adequately control their weeds. Whether that will be sufficient in 1997 remains to be seen; however, the normal expectation is that two applications may be needed.

The first application of 16 to 32 oz/A in conventionally tilled Roundup Ready soybeans should

occur about three to four weeks after planting and weed emergence to prevent early competition from the weeds. A second application or cultivation applied two to three weeks later will allow the soybean to canopy and out-compete late emergers.

Roundup Ultra does not provide residual preemergence weed control, so scout fields accordingly. Up to 64 ounces (2 qt) of Roundup Ultra per acre can be applied to Roundup Ready soybeans from cracking to flowering. These two quarts can be applied in a single or multiple applications. In no-till soybeans, an application at planting also may be needed.

Probably the major concern about extensive Roundup Ultra use is off-site spray drift to sensitive species. Spray drift is the physical movement of spray droplets during application, not vapor movement after spray deposition onto the target. Although Roundup Ultra vaporization is essentially nil, spray drift can be hazardous to sensitive plants. Roundup Ultra is non-selective and will injure most plant species at normal concentrations.

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Field updates

Gary Hein, Extension Entomologist, Panhandle District:

Army cutworms are damaging some newly emerging sugarbeets in western Nebraska. The extent of the problem is not known as yet. This is likely to be a problem mainly in fields that were planted to a winter cereal cover crop over the winter. The cutworms move from the cereal crop to the emerging beets when the cover crop is killed. Because of the cutworms' larger size, a small number can cause a great deal of damage in a short time.

Ray Weed, Extension educator for Kimball-Banner counties: The condition of wheat in Kimball and Banner counties varies tremendously. We have good soil moisture with 3.22 inches for the year, up 1.02 from this time last year. Wheat seeded at normal planting time (Sept. 1-10) established adequate growth going into winter. However, significant acreage was planted late and was more susceptible to wind damage last November and Decem-

ber when there was inadequate snow cover. Some seedlings were buried when soil eroded off the ridges. Last week I saw late planted Buckskin on light soils/hilltops in south central Kimball County in very poor to poor condition. Wheat across the road planted at the normal date(s) is in fair to good condition.

Steve Pritchard, Extension Educator in Platte County: I have received some reports of winter kill in both established and newly seeded alfalfa stands. Estimated damage ranges from 15% to 30%. About 15% of the corn planting was completed by the end of last week.

Gary Hergert, professor of agronomy, West Central District: The lack of significant rain in west

central Nebraska last week (April 28-May 2) has allowed farmers to continue corn planting. The moisture in ridge tilled fields is excellent. In some disced fields, there may be small areas of dry soil that may require at least 0.5 inch to provide sufficient moisture for germination. With the warmer weather, some winter wheat is showing moisture stress where soil moisture storage is low. Precipitation levels are 2 inches below normal at North Platte.

Gary Zoubek, Extension Educator in York County: By Wednesday, about 60-70% of our corn was planted. A few producers have started planting soybeans, but not too many. Field conditions have been good.

(Continued on page 68)

Corrections

Authority Broadleaf Effectiveness. Authority Broadleaf and Canopy XL contain the same active ingredients (sulfentrazone + chlorimuron ethyl) in the same proportions. The effectiveness of the two products is identical. In the May 2 issue of *Crop Watch* we incorrectly listed the rating of Authority Broadleaf. The correct ratings are ragweed - 9, and sunflower - 8.

Postemergence Harness and Surpass. Harness, Harness Extra, Surpass and Surpass 100 are labeled for postemergence application on corn up to 11" tall. In the April 25 issue of *Crop Watch* these materials were incorrectly listed as not registered postemergence.

Alex Martin
Extension Weeds Specialist



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Lisa Brown Jasa, Editor

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Will Roundup-resistant weeds be next?

Amid all the excitement for the new Roundup Ready soybeans, some researchers worry that their use may lead to the unintended development of "Roundup Ready weeds" (weeds resistant to glyphosate). This could lead to the loss of an excellent herbicide as an effective weed management tool in conservation tillage systems. (For two related stories, see *ALS-resistant shattercane confirmed* and *ALS-resistance spreading through Midwest* in the April 25 *Crop Watch*.)

Confirmed cases of weeds developing resistance to glyphosate are rare. It generally has been thought that development of weed resistance to glyphosate is unlikely, based on the lack of weeds or crops inherently tolerant to glyphosate despite a long history of use. Glyphosate's mode of action, chemical structure, limited metabolism in plants, and lack of residual

activity in soil suggests that the herbicide exerts a low selection pressure on weed populations.

Even though the chance of weeds developing resistance to glyphosate is low, it is not impossible. Last year, Australian researchers reported that a glyphosate-resistant annual ryegrass (*Lolium rigidum*) appeared. The resistant ryegrass was found on a farm where glyphosate plus 2,4-D had been used for preplant weed control in conservation tillage for ten consecutive years. While adding 2,4-D may have additive or synergistic effects on some weeds or enhance the spectrum of weeds controlled, only glyphosate effects a grass weed, so adding 2,4-D was not a successful management strategy to prevent herbicide resistance in ryegrass.

As more and more acres of crop land are planted to Roundup Ready crops, the potential for more weeds

developing resistance to glyphosate increases. This is especially true where any given weed is found in large numbers both preplant and postemergence. The multiple use of the herbicide would simulate a soil persistence similar to herbicides such as atrazine, which selected for resistance despite very low initial frequencies of resistant individuals displaying poor fitness. We should consider using precautions against multiple uses within a crop season with herbicide-resistant crops.

It also may be unwise to use two Roundup Ready crops in succession within any given crop rotation. Even with this exciting new technology of herbicide-resistant crops, there is still no substitute for integrated weed management, i.e., using a combination of weed control techniques including mechanical, cultural, biological, and chemical.

Drew Lyon, Extension Dryland Cropping Systems Specialist, Panhandle District
Alex Martin, Extension Weeds Specialist, Lincoln

Sorghum ergot update

University of Nebraska researchers are taking a "naturalist" position in regard to sorghum ergot research this season: they won't risk exposing the state's crop by bringing in ergot plants for research. Researchers did jumpstart several popular sorghum varieties in greenhouses and have planted them at sites in central and eastern Nebraska where they can be watched daily to see if ergot develops. Alerts will be issued if needed.

While ergot is a concern this year, researchers point out that many other factors are likely to have more of an impact on the crop than ergot.

"The season we have will have 10 times the effect on the crop that ergot will," said USDA ARS plant pathology researcher Stan Jensen.

A UNL agronomy professor and sorghum breeder, David Andrews, worked in the presence of sorghum ergot for 25 years in Africa and India.

"Generally, ergot isn't a problem

in normal conditions," Andrews said.

In certain circumstances, such as in hybrid seed production or if hybrids become male sterile (no pollen) during cooler nights, ergot is more of a concern, Andrews said. Sorghum ergot only infects unfertilized sorghum flowers, creating an especially high risk for the male sterile flowers prevalent in seed production.

"As far as Nebraska is concerned, we don't know what will happen here," Andrews said. "We want to be very wary of this disease, but we don't want to get into a panic situation. Farmers in other countries have it and get by."

An Emergency Exemption application has been submitted to EPA for Tilt fungicide, manufactured by Novartis Corporation, for control of sorghum ergot. The request is part of a regional application from Texas, Kansas, and Nebraska. A reply from EPA is expected in three to six weeks.

Herbicide-resistant soybeans

(Continued from page 61)

Even small amounts of Roundup drift onto corn or sorghum could cause a problem, so apply good judgement to the situation. Large droplets, low nozzle height, and low wind speed are the desirable combination for reducing spray drift (see page 63).

Aerial application of Roundup Ultra on Roundup Ready soybeans is not allowed in Nebraska.

Fred Roeth, Extension Weeds Specialist, South Central District
Drew Lyon, Extension Dryland Cropping Systems Specialist, Panhandle District
Alex Martin, Extension Weeds Specialist, Lincoln

Take steps to reduce pesticide drift

It is estimated that two-thirds of the pesticide drift problems which occur each year involve mistakes which could have been avoided.

Drift is of concern because it takes the pesticide from the intended target, making it less effective, and deposits it where it is not needed or wanted. The pesticide then becomes an environmental pollutant in the off-target areas where it can injure susceptible vegetation, contaminate water or damage wildlife. Drift cannot be completely eliminated but the use of proper equipment and application procedures will maintain the drift deposits within acceptable limits.

There are two kinds of drift: 1) **particle drift** is off-target movement of spray particles; and 2) **vapor drift** is the volatilization of pesticide molecules and their movement off-target.

Dave Smith, a Mississippi State University ag engineer, analyzed data from more than 100 studies involving drift from ground sprayers. Of the 16 variables he considered, three were most important.

1. Wind speed. When the wind speed was doubled, there was almost a 700% increase in drift when the readings were taken 90 feet downwind from the sprayer. Spray

Plan applications, try to avoid rush

Application timing is the most important factor in achieving success with postemergence herbicides, which are growing in popularity. Remember that the application window is relatively narrow for postemergence applications — usually five to seven days — and the growing demand for application equipment at this time may tax availability, as well as your patience.

It is essential that growers have a realistic plan for making timely applications, recognizing that wind and rain often eliminate spray days. If unexpected delays do occur, producers should not be tempted to apply herbicides even when conditions aren't appropriate.

Applying herbicides when it is too windy results in drift that can injure sensitive plants. As nonselective herbicides including Liberty and Roundup become widely used with resistant crops, drift management becomes a major concern.

Alex Martin, Extension Weeds Specialist

when winds are 10 mph or less.

2. Boom height. When the boom height was increased from 18 to 36 inches the amount of drift increased 350% 90 feet downwind.

3. Distance downwind. If the distance downwind is doubled, the amount of drift decreases five-fold. If the distance downwind goes from 100 to 200 feet, you have only 20% as much drift at 200 feet as at 100 feet and if the distance goes to 400 feet, you only have 4% of the drift you had at 100 feet. Check wind direction and speed when starting to spray a field. You may want to start spraying one side of a field when

the wind is decreased. Also it may be necessary to only spray part of a field because of wind speed, wind direction and distance to susceptible vegetation. The rest of the field can be sprayed when conditions change.

Using some of the new nozzle types and adjusting spray pressure also can help reduce drift. Higher spray pressures produce smaller droplets which are more susceptible to drift. If using a rate controller, be careful of increased speed. Since most rate controllers increase the pressure to maintain the same gpa, when the speed increases, try to maintain the speed within $\pm 10\%$.

For example, if applying 20 gpa at 8 mph at 40 psi and you increase the speed to 11 mph, the pressure will now be 76 psi which will produce a lot of small particles prone to drift and also the pressure will be above the operating range of most nozzles. Drift reduction agents are helpful.

Monsanto has a guide and video on on-target herbicide application. It addresses spray particle sizes, nozzle selection, spray pressure, factors affecting drift and how to control drift. An Extension NebGuide, G90-1001, *Spray Drift of Pesticides*, also addresses these issues.

**Bob Klein, Extension Cropping Systems Specialist
West Central District**

Chinch bug numbers to be low

Chinch bug numbers were low in overwintering bunch grass samples collected in late March from Gage, Pawnee, Richardson, and Thayer counties.

Of 24 bunch grass samples examined, only seven contained chinch bugs and the numbers in those samples were relatively low, ranging from 2-20 per square foot.

Based on these counts and our observation last summer, we do not expect widespread chinch bug problems this year. However, as occurred last year there may be some localized heavy infestations in outer rows of sorghum next to wheat.

**ZB Mayo
Entomology Professor**

Doing nothing may be best

Late-season weed control options in wheat

Most winter wheat in Nebraska has jointed, but in some fields weeds are just now emerging. Applying herbicides such as Banvel or 2,4-D after jointing poses a significant risk for crop injury. What weed control options are available to wheat producers at this time?

The first option is to do nothing. If the wheat stand is good, the wheat is jointed, and the crop is growing rapidly, newly emerging weeds should pose little threat to winter wheat yields. A healthy winter wheat crop is very competitive with summer annual weeds. These weeds may, however, pose problems at harvest time under some weather conditions.

Doing nothing is also a good choice for winter annual weeds such as the fall-germinated mustards. At this time, the damage from competition has already been done. Killing the weeds now will not improve yields. It may reduce some seed production, but is probably not worth the cost of a herbicide application.

If wheat stands are thin and/or the wheat has not yet jointed, herbicides may be needed. This is particularly true for fields with emerging wild buckwheat. If the wheat is jointed, use Buctril herbicide, which is safe to use in winter wheat up until the boot stage. Buctril is a contact herbicide and requires good spray coverage to kill weeds. Buctril should be applied in 15 to 20 gallons/A of a carrier and at a spray pressure of 30 to 40 psi to get good coverage. If the winter wheat canopy is heavy, good weed coverage, and therefore good weed control, may be difficult to obtain.

The sulfonylurea herbicides such as Ally, Amber, Finesse and Peak may be applied up until the boot stage of winter wheat development; however, these products should be tank mixed with a non-

sulfonylurea herbicide, and many of these herbicides should not be applied after wheat is jointed. The sulfonylurea herbicides will provide some residual control of later emerging weeds, but this residual control comes at a cost. Re-crop options are greatly limited following the application of most sulfonylurea herbicides used in wheat.

If the decision is made to apply 2,4-D after jointing, producers should apply the herbicide as soon as possible. The risk of injury from 2,4-D increases rapidly as the plant progresses toward the boot stage.

The amine formulations of 2,4-D provide greater crop safety than the ester formulations. However, weed control may not be as good with the amine formulations. Banvel should never be applied to wheat after the joint stage or serious crop injury is a real possibility.

**Drew Lyon, Extension Dryland Cropping Systems Specialist
Panhandle District**

**Robert Klein, Extension Cropping Systems Specialist
West Central District**

Gail Wicks, Extension Weed Scientist, West Central District

Long-term benefits of lime require planning, fall application

A number of calls have come in regarding soil pH. It might be helpful to review our recommendations about when to lime. It is too late to do much now, but if you have a recent soil test you can review it and note what fields may need lime next fall.

Soil pH is considered neutral in the 6.5 to 7.0 range. A soil test will report the pH of the soil and if the soil tests low, a buffer pH is conducted to determine lime requirement. This test is needed since the quantity of lime needed to raise the pH differs based on the soil texture. Lime requirement is based on incorporation of the lime to about seven inches.

Soil pH affects crops in a four ways.

1. Direct effect of extreme pH on root growth.
2. Effect on solubility of elements in soil.
3. Effect on soil microorganisms growth and survival.

4. Effect on effectiveness of some herbicides.

Regarding soil fertility, the second and third points are most important. The extremes of soil pH cause the most problems. Phosphorus is less available at either pH extreme. The reason low pH is a problem in some areas is that aluminum can come into solution at low pH. Aluminum is toxic to the plants, more so than the low pH. Luckily, in Nebraska we don't have high aluminum soils so toxicity is not a problem.

For legumes soil pH affects the bacteria responsible for nodulation and symbiotic fixation of nitrogen. When the pH is low, the bacteria don't function properly. Plants may exhibit nitrogen deficiency.

Luckily, in Nebraska many soils that are low in pH in the surface are higher in pH in the sub-surface. A 6- to 12-inch sample is often needed in addition to a surface sample to determine pH needs.

(Continued on page 66)

You asked about it . . .

What is the recommended time for planting soybeans and sorghum? Is late April to the first week of May okay?

The experts we talked to recommended using soil temperature rather than the calendar as a guide for planting date. Both crops require a 60 F soil temperature for germination. It's probably best to wait until the soil temperature stabilizes at that level, although producers with a lot of acres may have to compromise and start planting early to get it all in the ground in time. Current soil temperatures in northeast Nebraska warrant a delay.

Roger Elmore, Extension Agronomist in the South Central District, notes that soybean yield potential is higher when planted May 10-20.

John Witkowski, Extension Entomologist in the Northeast District, noted that their research indicated that planting soybeans later (May 15-20) could reduce or eliminate the need for insecticides to control bean leaf beetles.

Ken Hubbard, High Plains

Climate Center, also recommends delaying planting until soil temperatures have stabilized. He analyzed maturity dates based on last year's weather, assuming a medium length maturity for soybeans and a full season sorghum. "Even emergence as late as the last of May in the Clay Center area, we still had maturity by Oct. 10. There is only about a 10% chance of getting a 28 F freeze on or before Oct. 10."

Another producer asked about pumping manure from his swine pit into an area to be planted to soybeans? Which is better — knifing or surface application?

Gary Zoubek, Extension educator in York County, suggested that the best place to use the natural nutrient would be knifed into corn ground to more fully use the available nitrogen.

Charles Shapiro, Extension soils scientist in the Northeast District, suggested starting with an analysis to determine its actual nutrient value. If a test isn't possible, book value on swine pit manure (as noted in Extension

EC89-117) is 4% dry matter, 35 lbs. total nitrogen per 1000 gallons, NH_4 at 26, P_2O_5 at 27 and K_2O at 22 lbs/1000 gallons. A 50 bushel/acre bean crop will contain about 200 lbs of nitrogen and 40 lbs of phosphorus. If the producer is going to apply the slurry every few years, then it can be applied at the nitrogen removal rate. Since only 35% of the organic nitrogen is available the first year, the nitrogen rate can be increased to account for this.

Surface application of reasonable rates of slurry will be fine, but the NH_4 will probably be lost if not incorporated within a few days.

Shapiro's recommendation: 6,000 to 8,000 gallons maximum per acre would be reasonable if the land would not have additional slurry for many years. Broadcast and disk application would be preferable at higher rates since planting over knifed areas could cause germination problems, especially at high rates. Knifing in the fall probably would be okay for spring planting. While soybeans may not "need" nitrogen, they will use it.

Applying lime (Continued from page 65)

Apply lime under the following circumstances:

Crop	Surface pH	Sub-surface pH
Alfalfa, sweet clover	< 6.3	<6.0
Corn, sorghum, wheat	<5.0	<6.0
Soybeans	<5.5	<6.0

Apply lime a year before the crop is to be planted. It should be incorporated and the full recommendation should be applied up to 4 tons per acre. Applications can be reduced if tillage depth is reduced. The Cooperative Extension NebGuide *Estimating Ag Lime Quality* gives complete details.

There are many sources of lime. The NebGuide explains how the effectiveness of lime is calculated. Most lime recommendations are given for ag lime which is considered 60% effective. Other lime materials are more effective and can be applied at lesser amounts. The NebGuide provides the calculations. For example, pelleted lime is widely available and can have an effectiveness of 95%. To calculate the equivalent pelleted lime rate for an ag lime recommendation, multiply the lime requirement by 0.63. A lime requirement of 4000 lbs per acre would then be 2530 lbs per acre. In addition to using less product, the pelleted lime will increase pH at a

faster rate than ag lime. The drawback with pelleted lime is that it is more costly.

Deciding whether to use lime is not easy since the benefits are long term, and often lime doesn't produce dramatic results in Nebraska. However, if the land is owned or there is a long-term lease, liming based on the above recommendations should be beneficial over the long run.

Charles Shapiro, Extension Soils Scientist, Northeast District

Seed supply update:

Grain sorghum and alfalfa seed are limited — favorites may not be available. Check, then plan.

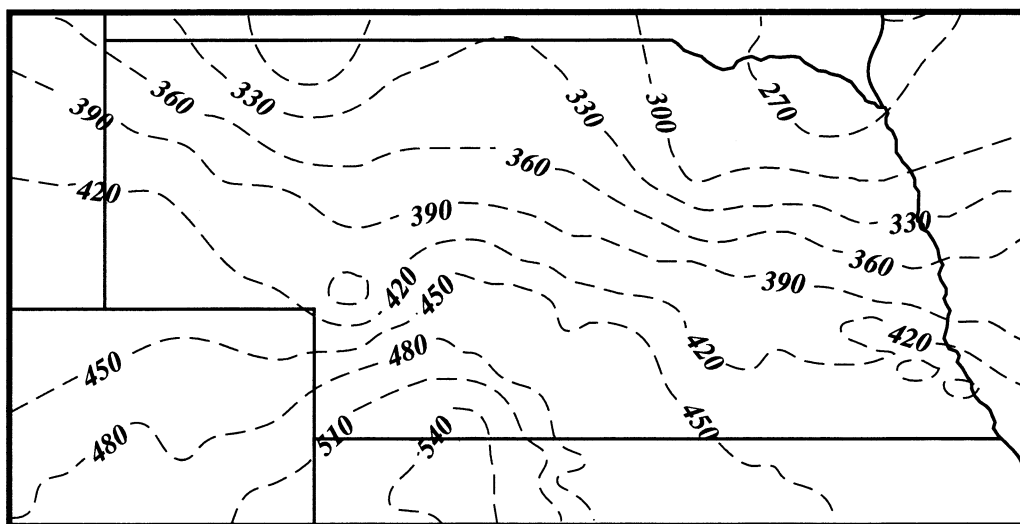
Weather update

	Precipitation (%=percent of average)				Soil Temperature Summary Seven days ending on 4/29 Soil temperature in Fahrenheit @ 4 in.			Growing Degree Day Accumulation For medium maturity wheat Ending 4/27		
	4/21-4/27		9/1-4/27							
	Act.	%	Act.	%	Ave.	Norm.	Dep.*	Actual	Normal	% +/- norm
Ainsworth	1.06	161	11.46	113	55.1	59.6	-4.6	256	369	-6
Alliance	1.02	179	5.16	77	53.5	57.5	-3.9	334	387	-3
Beatrice	1.98	255	8.87	62	54.1	63.0	-8.9	493	547	-3
Concord	1.19	154	9.72	74	48.8	61.1	-12.3	253	390	-7
Elgin	1.04	144	8.57	72	53.2	60.9	-7.6	249	390	-8
Holdrege	0.70	98	9.13	88	52.2	61.3	-9.1	500	510	-1
McCook	0.43	65	7.68	87	60.0	60.4	-0.4	546	492	3
Mead	0.75	93	6.09	42	53.3	62.6	-9.2	407	492	-4
North Platte	0.04	6	9.95	124	54.5	59.8	-5.3	500	476	1
Ord	0.75	101	8.23	68	48.8	61.1	-12.3	377	455	-4
Red Cloud	0.98	134	8.24	54	58.5	61.4	-2.8	494	510	-1
Scottsbluff	0.55	104	1.81	49	53.8	57.5	-3.8	379	398	-1
Sidney	0.12	21	0.50	13	53.9	57.6	-3.7	449	439	1
York	1.22	156	2.96	47	54.5	62.0	-7.5	402	472	-3

Growing degree days right for alfalfa weevil activity

Enough growing degree days (GDDs) have accumulated in the southern half of Nebraska to warrant scouting for alfalfa weevil larvae activity (*see map*). This is in an area roughly south of a line from Crawford to Omaha. Alfalfa weevil larvae damage is usually visible when 375 GDD's (48 degree base) have accumulated.

Weevils should be most advanced in the southwest part of the state, south and west of North Platte and Lexington. Growers in the southwestern Panhandle and the southern tier of counties also should be scouting regularly. Points north of the Crawford-Omaha line will begin seeing damage this week; activity north and east of there will be slightly delayed.



Base 48 growing degree days accumulated since Jan. 1, indicating alfalfa weevil activity.

Weevil larvae will feed from 14 to 21 days, so feeding should continue through most of May. Feeding damage will increase as larvae get older. Use the stem count

method and economic threshold charts in last week's newsletter as a guide to management.

**Keith Jarvi, Extension Assistant
Integrated Pest Management
Northeast District**

When evergreens suffer, but there's no disease

Each year, various narrow-leaf evergreens such as pines, spruce and yew are troubled with needle browning, die-back, poor vigor or death. These are problems apart from definite diseases on the needles or branches. An explanation of some possible causes follows.

Wet soil: Excessive amounts of soil water can result in a saturated condition which reduces the oxygen level to a point where small roots die. Examples of this nature are yew's in a foundation planting with a heavy clay sub-soil and no internal drainage. Typical symptoms are poor color coupled with poor growth.

Dry soil: Lack of water for a prolonged time may result in a condition similar to excess wet periods. In this case the soil often pulls away from the roots, particularly clay type soils, resulting in desiccation and killing of the fine roots. Trees planted in sandy or gravel sites are

most susceptible to drought injury. Typical symptoms are excessive needle drop and poor vigor.

Winter injury: Winter injury is often found in association with dry soil conditions. Evergreens continue to transpire or lose water from leaves during the winter months. If soil moisture is low during these months the needles cannot replace the water lost. When this occurs the plants will die. Often, the symptoms are not noticed until the following spring. Death may occur on one branch or the whole tree. The side of the tree facing the prevailing winds in most susceptible to winter injury.

Herbicide injury: Herbicide injury is difficult to assess — symptoms are not as pronounced as in deciduous plants. Needle distortion may be slight, but root damage could be sufficient to limit water uptake. The most common symptom is tip damage on new growth.

Heavy soil: Some evergreens appear to lose vigor and die-back after 15 to 20 years. We don't know the exact cause, however it is generally thought that heavy soils restrict root development, eventually killing the plant.

Other common causes of evergreen injuries are air pollution, sunburn and mechanical damage. Remember that each plant differs in its response to these conditions, depending on its history and current health.

It is difficult to develop a control program for these problems. If a plant dies, try to identify the problem and correct it before replanting. In some cases it may be necessary to replant a locally adapted or more tolerant plant.

Diane A. Merrell

**Extension Assistant and
Diagnostician, Plant Pathology**

Plant & pest clinic update

Spruce problems continued to be a major source of questions at the UNL Plant and Pest Diagnostic Clinic this week. Most of the time a disease is not found to be the culprit (see story above). Some cedar samples had physical injury and Phomopsis blight.

A potato seed piece grown and saved to plant this year was found to be infected with potato virus X, Y, and M. Potatoes saved for planting the next season are likely to be infected with a virus. Certified seed pieces will provide a healthier and more productive potato crop.

Rough bluegrass was identified as a contaminant of bluegrass seed. The only control method is to remove the rough bluegrass and re-seed.

Diane A. Merrell

**Extension Assistant and
Diagnostician, Plant Pathology**

State applies for exemptions

The Nebraska Department of Agriculture has requested several pesticide emergency exemptions for the current production year.

A "Specific" Emergency Exemption application has been submitted to the EPA for use of Tilt fungicide, manufactured by Novartis, for control of rust on dry beans.

A "Specific" Emergency Exemption was issued for the following products for control of potato late blight: Acrobat, manufactured by American Cyanamid; Curzate-M8, manufactured by E. I. DuPont de Nemours and Company; Manex C8 — (same active ingredients as Curzate), manufactured by Griffin Corporation; and Tattoo C, manufactured by Agr Evo USA Company. The exemption expires May 2, 1998.

The Nebraska Department of Agriculture declared a "Crisis" Emergency Exemption for Maxim, manufacturer by Novartis, to control

silver scurf on cut potato seed. The exemption is valid May 6 through June 10.

All Section 18 "Specific" Emergency exemptions require a permit from the Nebraska Department of Agriculture. Usage and distribution reports are required. For more information, contact Geir Friisoe at the Nebraska Department of Agriculture, (402) 471-2394.

**Geir Friisoe, Pesticide Program
Manager, Nebraska
Department of Agriculture**

Field updates

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Paul Hay, Extension Educator in Gage County: Corn planting is 80% complete and some beans are planted. Wheat is doing well, however some fields suffered winter damage and are slow in responding this spring. Early preplant herbicide applications for no-till are in place.